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| **TITLE:** | FS/CCR Communications speeds and Cabling considerations. |
| **ABSTRACT:** | Explanation of maximum communications speeds depending on cable type for Single and Multiple FS/CCR arrangements. |

## Introduction

This technical note is intended to illustrate attainable communications speeds when using 5-wire, or 3-wire serial cable configurations with the FS/CCR.

## FS/CCR Implementation

While the FS/CCR will regenerate an RS232 signal as it is processed, an increase to the number of units arranged in series will reduce the achievable communications speeds as a result of cumulative signal delays.

Communications speeds can be reliably achieved with an appropriate communications protocol, e.g. the Husky File Transfer Utility HCOM. However, as with all communications channels, the FS/CCR must not be considered as an error free link and suitable error checking and data recovery protocols must be included into any Communications application.

The following table describes the reliable communications speeds attainable per number of FS/CCR units:

| **Cable Wire Type** | **Communications Speeds / number of FS/CCR** | |
|---|---|---|
| | **1 to 16 Units** | **17 to 32 Units** |
| 3 wire - Tx, Rx and GND. **(CTS/RTS not connected)** | 38,400 bps | 19,200 bps |
| 5 wire- Hardware Handshaking **(CTS/RTS connected)** | 19,200 bps | 9,600 bps |

**NOTE: Attaining transfer speeds above 19,200bps is not possible if only the application ignores RTS/CTS. There must be NO physical connection to any of the RTS/CTS pins to fully disable handshaking.**

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